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<u>THIR UNITED STATES OF AMIRRIOS</u>

TO ALL TO WHOM THESE PRESENTS SHALL COME?

Mission Ranches

LOCALS, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPEICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OF ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC PLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR TING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE EURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT y the Plant Variety Protection Act. (84 stat. 1542, as amended, 7 u.s.c. 2321 et seo.)

LETTUCE

'Loneoak'

In Testimony Interest, I have hereunto set my hand and caused the seal of the Illust Buriety Irotection Office to be affixed at the City of Washington, D.C. this nineteenth day of September, in the year two thousand and five.

Plant Variety Protection Office Agricultural Marketing Service

EXHIBIT A

Loneoak is a red oakleaf type of lettuce developed expressly for the expanding "baby leaf" salad mix market. Loneoak was derived from a cross made in 1995, between Red Salad Bowl and the F₁ of Dark Lollo Rosa x El Dorado.

The F₁ seeds were planted in Oct., 1995, the seedlings were inoculated with lettuce downy mildew (*Bremia lactucae*) and the resistant plants saved.

F₂ seed was planted in April 1996; the seedlings were again inoculated with downy mildew and the resistant ones were selected for dark red color, oak leaf shape and thick leaf texture.

 F_3 seed was collected individually from the F_2 plants. Each was indexed for resistance to downy mildew and in Dec., 1996, only those homozygous for resistance were advanced. Selections were made from those lines that were most uniform for dark red color, oak leaf shape and thick leaf texture.

The same selection criteria were repeated on the F₄ lines in July of 1997.

NOTE: All selection work to this point was by pedigree selection and the selections were taken at the "baby leaf" market stage (4"-5" seedlings).

Selections within the most uniform F_4 line were massed and advanced to F_5 by mid-1998. Observation of the F_6 in February, 1999, was favorable and the line was named Loneoak. Observations of the F_7 have been completed in September, 1999.

Loneoak has been observed through 3 generations (F5,6,7) of reproduction and is found to be uniform and stable. No variants have been observed.

Loneoak is easily distinguished from Red Salad Bowl by its darker red color and its resistance to most strains of lettuce downy mildew.

EXHIBIT B

Loneoak is most similar to Red Salad Bowl, but differs significantly due to its darker red color and the fact that it is resistant to downy mildew Pathotypes I, IIA, IIB, III, IV and V. Red Salad Bowl is resistant only to Pathotype IIA.

The color of Loneoak is 187A on the Royal Horticultural Society Colour Chart.

Lettuce application No. 200000020, 'Loneoak'

Exhibit B

Loneoak carries downy mildew resistant gene, Dm18. Red Salad Bowl does not carry resistant gene, Dm18.

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE DIVISION

OBJECTIVE DESCRIPTION OF VARIETY

	LETTU	CE Lactuca sativa		
NAME OF APPLICANT (S)			FOR OFFIC	IAL USE ONLY
Mission Ranches			PVPONUMBER	1000
ADDRESS (Street and No. or R.F.D. No.,	City, State, and ZIP Code)	÷		10020
100 Broadway			VARIETY NAME	****
King City, CA 93930				
·			EXPERIMENTAL DES	IGNATION
				·
Place numbers in the boxes for the charac spaced plants. Royal Horticultural Society	ters which best describe this to or any recognized color state.	variaty. Measured data should be ndard may be used to determine	the mean of an appropriate : plant colors.	number (at least 10) of w
The location of the test area is:	ornia	Color System Used: Colour Cha	Royal Horticul	tural Society
1. PLANT TYPE: (See list of suggest	red check varieties page 4.]	[COTOUT CITA		
01=Cutting/Leaf	05-Great Lakes 0			
0 1 02=Butterheed 03=Bibb 04=Cos or Romai	06=Vanguard Gro 07=Imperial Groune ne 08=Eastern (Ithac	ID 11=OTHER		
2. SEED: COLOR	LIGHT DOR		DORMANCY	
1=White (Silver Gray) 2=Black (Gray Brown) 3=Brown (Amber)	2 1=Light Requ 2= Light Not F	11 1 1 303	ceptible t Susceptible	
3. COTYLEDON TO FOURTH LEAF ST.				ld and the
2 SHAPE OF COTYLEDON	grown under	or photograph or photocopy of toptimal conditions. Intermediate 3-Spatu		en beschillid
6 SHAPE OF FOURTH LEA	F:	<u> </u>	\wedge	·
			() 25 - 25 - 25 - 25 - 25 - 25 - 25 - 25	
1	2 3	. 4	5 6	
2 2 LENGTH/WIDTH INDEX C	OF FOURTH LEAF: L/W x 1	10		
7 APICAL MARGIN:	1=Entire	4=Moderately Dentate	7=Lobed	
7 BASAL MARGIN:	2=Creanate/Gnawed 3=Finely Dentate	5=Coarsely Dentate 6=Incised	8-OTHER (apecify)	
2 UNDULATION:	1=Flat	2=Slight	3≈Medium	4=Marked
2 GREEN COLOR:	1=Yellow Green	3-Medium Green	5-Blue Green	7=Gray Green
ANTHOCYANIN:	2=Light Green	4=Dark Green	6=Silver Green	. G.dy Gitteri
4 DISTRIBUTION	1=Absent 2=Margin Only	3=Spotted 4=Throughout	5-OTHER (specify)	
3 CONCENTRATION:	1=Light	2=Moderate .	3=Intense	
ROLLING:	1=Absent	2-Present		
1 CUPPING:	1=Uncupped	2~Slight	3=Markedly	,
1 REFLEXING:	1=None	2~Apical Margin	3+Lateral Margins	

4. MAT	TURE	LEAVES (observe harvest-matus	re outer leaves):	200	n U n 0 2 0 1
NOT	E: Pri	ovide color photo of hervest-me MARGIN:	ture leaves which accurately shows color ar	od margin characteristics.	
	3	INCISION DEPTH:	1=Absent/Shallow (Dark Green Boston) se margin/	2=Moderate (Vanguard)	3=Deep (Great Lakes 659)
	2	INDENTATION: If the second of the morein	1=Entire (Dark Green Boston) , 2=Shallowly Dentate (Great Lakes 65)	3-Defply Dentate (Great Lakes 659) 4-Crenate (Vanguard)	5-OTHER (apecify)
	2	UNDULATION OF THE APICAL MARGIN:		2=Moderate (Vanguard)	3=Strong (Great Lakes 659
	3	GREEN COLOR:	1=Very Light Green (Bibb) 2=Light Green (Minetto)	3=Medium Green (Great Lakes) 4=Dark Green (Vanguard)	5+Very Dark Green 6-OTHER
		ANTHOCYANIN (grown at a	r below 10 C):		
	4	DISTRIBUTION:	1=Absent 2=Margin Only (Big Boston)	3=Spotted (Calif. Cream Butter) 4=Throughout (Prize Head)	5-OTHER (specify)
	3	CONCENTRATION:	1=Light (Iceberg)	2=Moderate (Prize Head)	3=Intense (Ruby)
	1	SIZE:	1-Small	2-Medium	3-Large
	2	GLOSSINESS:	1=Dull (Vanguard)	2=Moderate (Salines)	3=Glossy (Great Lakes)
	1	BLISTERING:	1=Absent/Slight (Salinas)	2=Moderate (Vanguard)	3=Strong (Prize Head)
	3	LEAF THICKNESS:	1*Thin	2=Intermediate	3=Thick
	1	TRICHOMES:	1=Absent (smooth)	2=Present (spiny)	
S. PLAN	VT (at	market stage. Choose a compar	tion variety appropriate for this type.):		
	1 1	SPREAD OF FRAME LEAVES	J 1 1		· ·
4	3	cm This Variety	4 7 cm Red Salad Bo	OW1 (specify comparison variety	r)
4	3	HEAD OIAMETER (market tri	immed with single cop leaf): 4 7 cm Red Salad Bo	OW1(specify comparison variety	s)
	5	HEAD SHAPE:	1=Flattened 2=Slightly Flattened	3=Spherical 4=Elongate	5=Non-Heading 6=OTHER
	1	HEAD SIZE CLASS:	1*Small	2=Medium	3=Large
F 41	8/	HEAD COUNT PER CARTON			
3 8	3	HEAD WEIGHT: g This Variety	462,Red Salad Bow	1 (specify comparison variety	/)
	1	HEAD FIRMNESS:	1 = Loose 2 = Moderate	3=Firm 4=Very Firm	
	fbott	om of market-trimmed head):			
TC .	3/	SHAPE:	1=Slightly Concave	2=Flat	3=Rounded
			1=Flattened (Salinas)	2=Moderately Raised	3=Prominently Raised (Great Lakes 659)
7. CORE	lstem	Of market-trimmed head):			
2	7	mm Diameter at base of head	·		
1 5	ن لــــــا	Ratio of head diameter/core dia			
4	1 4 1	Core Reight from bass of head to	f - T - 1	_	
اتا	<u> </u>	mm This Variety			
8. BOLTI		Give First Water Date May 1	to germinate. This can and of	le date seed first receives adequate moisten does equal the planting date.	RUFE
6	7/1	Number of days from First Wate This Variety	or Oate to seed stalk emergence (summer co		J
[BOLTING CLASS: 2		≠Medium ≈Rapid	5=Very Rapid
9	1 F	Height of mature seed stalk: cm. This Variety	1 2 3 cm Red Salad Box	[]	
500000			POLITING considering news need	*	

5 2	Spread of Botter Plant (at wi		ed Salad	Bowl (spec	lly comparison varie	tyj
1	BOLTER LEAVES:	1=Straight		2+Curved		
2	MARGIN:	1=Entire		2~Dentate		
MV	CQLQR:	► Light Green	-	2-Medium Green	1	3-Dark Green
2	BOLTER HABIT: TERMINAL INFLORESCENCE:	1*Absent		2=Present		
2	LATERAL SHOOTS: (above head)	1-Absent		2=Present		
1	BASAL SIDE SHOOTS:	1=Absent		2=Present		
	(earliness of harvest-mature hi					
SEAS	ON Applic.1/ #of days	Check 1/ Fof days		CHE	CK VARIETY 3	
Spring	1 0 7	101	Red Sala	d Bowl		
Summ	•					
Fall						
Winter						
Give planting of	date(s), and location(s):					
\$pring	January 6, 199	9 Aromas	, CA		·	
Summe	er <u> </u>	· · · · · · · · · · · · · · · · · · ·		 		
Fall			·			
Winter	water date to harvest.	2/6:0:0:0				* · · · · · · · · · · · · · · · · · · ·
		2/Fill in check veri	lety name on the	appropriate line.		
IO. ADAPTATIC	IN: PRIMARY REGIONS OF ADA	PTION (tested and prov	ven adapted):	(0=Not tested	1≖Not Adapted	2=Adapted)
2 s	Outhwest (Calif., Ariz, desert)	2 West Coa	n 0	Northeast		
	forthcentral	0 Southeas	. 🗆	OTHER		
<u>s</u> [2	EASON: Spring (area West, Co	ast ,	2	Fall (area West	Coast)
[2	Summer larea West C	oast	2	Winter (area_Sou	thwest	1
<u></u>	REENHOUSE: 0	-Not tested		1-Not Adapted	2	-Adapted
1 so	DIL TYPE: 1	Mineral		2=Organic	3-	-Both
ORM LS-470-1 (9-86)						Page 3 of 4

11. DISEASES AND STRESS REACTIONS (0-Not tested; 1	Susceptible: 2-Intermediate; 3-Resistant; 4-Highly resistant; 5-Toleranth: "
<u>viaus</u>	FUNGALIBACTERIAL
O Big Vein	O Corky Root Rot (Pythium Root Rot)
Lettuce Mosaic	3 Downy Mildew (Reces I, IIA, IIB, III), IV, V
O Cucumber Mossic	O Powdery Mildew
O Broad Been Wilt	O Scieratinia Rot
O Turnip Moseic	O Bacterial Soft Rot (Pseudomonas spp. & others)
O Baet Western Yellows	O Botrytis (Gray Mold)
O Lett, Infectious Yellows	OTHER
Other Virus	
INSECTS	PHYSIOLOGICAL/STRESS
1 Cabbage Loopers	O Tipbum O Salt
O Root Aphids	5 Heat 0 Brown Rib (Rib Discoloration, Rib Blight)
1 Green Peach Aphid	O Drought OTHER
Other Insect	5 Cold
F3	POST HARVEST
OPInk Rib	U Internal Rib Necrosis (Blackheart, Gray Rib, Gray Streak)
O Russet Sporting	O Brown Stain
O Rusty Brown Discoloration	
12. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:	
13. COMMENTS:	
	•

SUGGESTED CHECK VARIETIES

TYPE

- 21 31 41

- CUTTING/LEAF BUTTERHEAD BIBB COS, OR ROMAINE GREAT LAKES GROUP VANGUARD GROUP IMPERIAL GROUP EASTERN GROUP STEM LATIN 5) 6) 7) 8)

- LATIN

CHECK VARIETY

SALAD BOWL
DARK GREEN BOSTON
BIBB
PARRIS ISLAND
GREAT LAKES 659-700
VANGUARO
VIVA
ITHACA
CELTUCE
MATCHLESS

EXHIBIT C (supplement)

Item 7: ratio of head diameter/core diameter

As Loneoak is a leafy spreading type of plant, it does not form a true head, so the head diameter can only be the same as the frame width which accounts for the unusually large "head".

Also the core has been selected to have a very small diameter so that the leaf attachment area is very small. See photograph in item 4. The small attachment is a plus for longer shelf and is preferred by the industry.

These two extremes are the reason for the unusual ratio between head and core.

EXHIBIT C, Item 2

Fourth leaf, 20 day old seedling



EXHIBIT C, Item 4

Harvest mature leaves



Red Salad Bowl (left) - Loneoak (right)

EXHIBIT D

Baby Leaf market stage



Loneoak



Red Salad Bowl

		FORM APPROVED - OMB NO. 0581- le in accordance with the Privacy Au arwork Reduction Act (PRA) of 1955
EXHIBIT E STATEMENT OF THE BASIS OF OWNERSHIP	Application is moving to make a	determine if a plant variety protect
1. NAME OF APPLICANTISI	2. TEMPORARY DESIGNATION	3. VARIETY NAME
Mission Ranches	OR EXPERIMENTAL NUMBER Red Oak	T
	ned bak	Loneoak
. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)	5. TELEPHONE (Include area code)	6. FAX (include area code)
100 Broadway King City, CA 93930 USA		(831) 385-3340
5 1. C. 33330 USA	7. PVPO NUMBER 2 0 0 0	00020
Does the applicant own all rights to the variety? Mark an "X" in appropriate	black Han places and in	Alacs 45
The state of the s	work. It no, please explain.	X YES NO
	to analysis to the second of t	
Is the applicant (individual or company) a U.S. national or U.S. based company		
If no, give name of country Is the applicant the original owner? X YES NO If no, please an	Y/ 	X YES NO
b. If original rights to variety were owned by a company, is the original PYES NO If no, give name of country		•
Additional explanation on ownership (If needed, use reverse for extra expense)		
Additional explanation on ownership (If needed, use reverse for extra space):		
Additional explanation on ownership (If needed, use reverse for extra space):		
Additional explanation on ownership (If needed, use reverse for extra space):		
tif needed, use reverse for extra space):		
ASE NOTE:		
ASE NOTE: variety protection can be afforded only to owners (not licensees) who meet or	e of the following criteria-	
ASE NOTE: variety protection can be afforded only to owners (not licensees) who meet or	e of the following criteria:	
ASE NOTE: variety protection can be afforded only to owners (not licensees) who meet or the rights to the variety are owned by the original breeder, that person must be a country which affords similar protection to nationals of the U.S. for the sam	ne of the following criteria: ne a U.S. national, national of a UP ne genus and species.	OV member country, or national
ASE NOTE: variety protection can be afforded only to owners (not licensees) who meet or the rights to the variety are owned by the original breeder, that person must be a country which affords similar protection to nationals of the U.S. for the sam the rights to the variety are owned by the company which employed the origin ationals of a UPOV member country, or owned by nationals of a country which and species.	ne of the following criteria: ne a U.S. national, national of a UP ne genus and species. al breeder(s), the company must b affords similar protection to natio	OV member country, or national e U.S. based, owned by nals of the U.S. for the same
ASE NOTE: Exercisely protection can be afforded only to owners (not licensees) who meet or the rights to the variety are owned by the original breeder, that person must it a country which affords similar protection to nationals of the U.S. for the sam the rights to the variety are owned by the company which employed the origin ationals of a UPOV member country, or owned by nationals of a country which enus and species. the applicant is an owner who is not the original owner, both the original owner.	ne of the following criteria: ne a U.S. national, national of a UP ne genus and species. al breeder(s), the company must be affords similar protection to nation	OV member country, or national e U.S. based, owned by nals of the U.S. for the same
ASE NOTE: variety protection can be afforded only to owners (not licensees) who meet or the rights to the variety are owned by the original breeder, that person must it a country which affords similar protection to nationals of the U.S. for the sam the rights to the variety are owned by the company which employed the origin attionals of a UPOV member country, or owned by nationals of a country which enus and species. the applicant is an owner who is not the original owner, both the original owner riginal breeder/owner may be the individual or company who directed final bree finition. The work Reduction Act of 1995, no persons are required to rea-	ne of the following criteria: ne a U.S. national, national of a UP ne genus and species. al breeder(s), the company must be national similar protection to nation or and the applicant must meet one ding. See Section 41(a)(2) of the	OV member country, or national e U.S. based, owned by nals of the U.S. for the same of the above criteria.
ASE NOTE: Exercisely protection can be afforded only to owners (not licensees) who meet or the rights to the variety are owned by the original breeder, that person must it a country which affords similar protection to nationals of the U.S. for the sam the rights to the variety are owned by the company which employed the origin ationals of a UPOV member country, or owned by nationals of a country which enus and species. the applicant is an owner who is not the original owner, both the original owner.	te of the following criteria: te a U.S. national, national of a UP te genus and species. al breeder(s), the company must be affords similar protection to nation of and the applicant must meet one ding. See Section 41(a)(2) of the	OV member country, or national e U.S. based, owned by nals of the U.S. for the same of the above criteria.

REPRODUCE LOCALLY fortune

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